HIGH DEFLECTION HYDROFOILS AND SWIM FINS

Abstract

Designs and methods are disclosed for permitting permit scooped shaped swim fin blades (184) to flex around a transverse axis to a significantly reduced angle of attack while reducing or preventing the scooped blade portion (254) from collapsing or buckling under the longitudinal compression forces (222) exerted on the scooped portion during a large scale blade deflection (212) by strategically alleviating or controlling such compression forces (222). Method are also disclosed for increasing flow capacity, effective scoop length, scoop depth over a greater length of the blade, reducing blade resistance to large scale deflections, reducing bending resistance within scooped blade portions (254) that are experiencing high levels of blade deflection. Methods are also provided for reducing lost motion and increasing propulsion during the inversion phase of a reciprocating kicking stroke cycle while also increasing the formation of a scooped blade region (254) during the inversion phase of the stroke cycle.